

REMARKS

A Petition and Fee for a One-Month Extension of Time and an Excess Claim Fee Letter for one (1) excess independent claim and three (3) excess total claims are submitted herewith.

Claims 1, 2, 4-16, and 18-25 are all the claims presently pending in the application. Claims 1, 2, 4-14, 16, and 18-20 are amended to more particularly define the invention. Claims 3 and 17 are canceled. Claims 21-25 are added to claim additional features of the invention. No new matter has been added.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by Aoki et al. (U.S. Patent Publication No. 2005/0110702 A1).

Claims 4-8, 11-14, and 18-20 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Aoki in view of Fujieda et al. (U.S. Patent Publication No. 2002/0070910 A1). Claim 9 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Aoki in view of Fujieda and Moore (U.S. Patent No. 5,472,255). Claim 10 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Fujieda in view of Maynard (U.S. Patent No. 6,072,154). Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Aoki in view of Maynard.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary aspect of the claimed invention (e.g. as recited in claim 1) is directed to an information display apparatus including a pair of main ribs located at respective ends of a fan face, a plurality of intermediate ribs interposed between the main ribs, a pivot for turnably fixing the main ribs and the intermediate ribs in a root portion, and the fan face joined to the intermediate ribs between the pair of main ribs as well as openably/closably bent like bellows. Either at least a part of the fan face includes a thin film flat display formed on a flexible and bendy thin film, or the thin film flat display formed on the flexible and bendy thin film is disposed to at least a part of the fan face. The thin film flat display includes a full color organic EL display capable of displaying a full color television image, and one of the main ribs includes a television receiver circuit.

Another exemplary aspect of the claimed invention (e.g. as recited in claim 2) is directed to an information display apparatus including a pair of main ribs located at respective ends of a fan face, a plurality of intermediate ribs interposed by the main ribs, a pivot for turnably fixing the main ribs and the intermediate ribs in a root portion, and the fan face joined to the intermediate ribs between the pair of main ribs as well as openably/closably bent like bellows. In an unfolded state of the fan face, a thin film flat display formed on a flexible and bendy thin film has a flat surface and is joined to vertex portions of mountains of the fan face such that the mountains of the fan face are joined in at least a part of the fan face. When the fan face is folded, the thin film flat display is folded to valleys of the fan face along the fan face in association with the folding operation.

Another exemplary aspect of the claimed invention (e.g. as recited in claim 8) is directed to an information display apparatus including a thin film flat display formed on a flexible thin film, the thin film flat display being a full color organic EL display capable of displaying a full color image, hold means for holding the thin film flat display from a back surface such that it is joined to front

surfaces of a plurality of rigid rectangular substrates when they are arranged on a flat surface, a case for accommodating the thin film flat display, and a take-up unit disposed in the case for taking up and accommodating the thin film flat display together with the hold means in the case using a direction parallel with long sides of the rigid rectangular substrates as an axis.

Another exemplary aspect of the claimed invention (e.g. as recited in claim 10) is directed to an information display apparatus including a thin film flat display formed on a thin film, the thin film including at least one of flexible shape memory alloy, shape memory resin, shape memory alloy fiber, and shape memory resin fiber, a case for accommodating the thin film flat display, an accommodation unit disposed in the case for accommodating the thin film flat display by taking up or folding it, and heat means for heating the thin film flat display when it is accommodated or unfolded.

Conventional information display apparatuses either are lackluster with respect to portability and weight (i.e. laptop computer), or are small and difficult to be seen (i.e., mobile phone). To remedy these drawbacks, thin film flat displays have been developed. However, the conventional thin film flat display is not typically flexible, which affects portability and storage. (Application at paragraphs [0002] and [0005]).

On the other hand, the exemplary aspects of the claimed invention may include an information display apparatus, where the thin film flat display includes a full color organic EL display capable of displaying a full color television image and one of the main ribs includes a television receiver circuit (Application at paragraph [0014]), where, in an unfolded state of the fan face, a thin film flat display formed on a flexible and bendy thin film has a flat surface and is joined to vertex portions of mountains of the fan face and, when the fan face is folded, the thin film flat display is folded to valleys of the fan face (Application at paragraph [0012]), including a take-up unit disposed in the case for taking up and accommodating the thin film flat display together with the hold

means in the case using a direction parallel with long sides of the rigid rectangular substrates as an axis (Application at paragraph [0019]), or including a thin film flat display formed on a thin film, the thin film including at least one of flexible shape memory alloy, shape memory resin, shape memory alloy fiber, and shape memory resin fiber (Application at paragraph [0022]). These exemplary features may provide an information display apparatus with enhanced portability. (Application at paragraph [0006]).

II. THE PRIOR ART REJECTIONS

A. The Aoki Reference

Aoki discloses flexible display membranes provided in various geometries. (Aoki at Abstract). The Examiner alleges that Aoki anticipates the invention of claims 1 and 2. Applicant respectfully disagrees.

For example, Aoki clearly fails to teach or suggest an information display apparatus, “wherein said thin film flat display comprises a full color organic EL display capable of displaying a full color television image, and one of said main ribs comprises a television receiver circuit”, as recited, for example, in claim 1. (Application at paragraph [0014]). Aoki also clearly fails to teach or suggest an information display apparatus, “wherein, in an unfolded state of the fan face, a thin film flat display formed on a flexible and bendy thin film has a flat surface and is joined to vertex portions of mountains of the fan face . . . , and . . . wherein, when the fan face is folded, the thin film flat display is folded to valleys of the fan face along the fan face”, as recited, for example, in claim 2. (Application at paragraph [0012]). As previously mentioned, this exemplary feature may provide an information display apparatus with enhanced portability. (Application at paragraph [0006]).

The Examiner alleges that Aoki teaches “an information display apparatus, wherein the thin film flat display comprises and electronic paper (display membrane 400 of fig. 5 comprises electrophoretic display also known as ‘electronic paper’, [0038]).” (Office Action at page 4, first paragraph). However, Aoki clearly fails to teach or suggest an information display apparatus, where the thin film flat display includes a full color organic EL display capable of displaying a full color television image and one of the main ribs includes a television receiver circuit. Indeed, the Examiner fails to allege that Aoki teaches this exemplary feature.

The Examiner also alleges that Aoki teaches the exemplary feature of the invention of claim 2 at paragraphs [0048]-[0050], specifically alleging that the display membrane 400 of figure 5 of Aoki can extend or collapse to form a fan. (Office Action at pages 3-4, “As to claim 2 . . .”). However, Aoki clearly fails to teach or suggest this exemplary feature.

The invention of claim 2 relates to the invention of Embodiment 2 shown in Figures 6-8 of the specification. Specifically, when a fan face is used as an organic EL film, the display is heaved up in an unfolded state as shown in Figure 7. Thus, in the invention of claim 2, the flat organic EL film is joined to the vertex portion of mountains 141a of the fan face 14, and, when the fan face is folded, the flat organic EL film is folded to valleys 141b of the fan face 14 along the fan face in association with the folding operation.

Indeed, Aoki clearly fails to teach or suggest an information display apparatus, where, in an unfolded state of the fan face, a thin film flat display formed on a flexible and bendy thin film has a flat surface and is joined to vertex portions of mountains of the fan face and, when the fan face is folded, the thin film flat display is folded to valleys of the fan face. The Examiner fails to prove that Aoki teaches or suggests all features of the invention of claim 2.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw these rejections.

B. The Alleged Aoki and Fujieda and Aoki, Fujieda, and Moore Combinations

Fujieda discloses a mobile communication terminal. (Fujieda at Abstract). Moore discloses a sun visor having a retractable sun screen. (Moore at Abstract). The Examiner alleges that the combinations of Aoki and Fujieda and Aoki, Fujieda, and Moore make the invention of claims 1, 2, and 8 obvious.

However, even assuming (arguendo) that one of ordinary skill in the art would combine Aoki and Fujieda and Aoki, Fujieda, and Moore, the resultant combinations fail to teach or suggest all features of the invention of claims 1, 2, and 8. Specifically, Aoki, Fujieda, and Moore – either applied alone or (arguendo) in combination – fail to teach or suggest an information display apparatus, “wherein said thin film flat display comprises a full color organic EL display capable of displaying a full color television image, and one of said main ribs comprises a television receiver circuit”, as recited, for example, in claim 1. (Application at paragraph [0014]). Aoki, Fujieda, and Moore also fail to teach or suggest an information display apparatus, “wherein, in an unfolded state of the fan face, a thin film flat display formed on a flexible and bendy thin film has a flat surface and is joined to vertex portions of mountains of the fan face . . . , and . . . wherein, when the fan face is folded, the thin film flat display is folded to valleys of the fan face along the fan face”, as recited, for example, in claim 2. (Application at paragraph [0012]). Further, Aoki, Fujieda, and Moore fail to teach or suggest an information display apparatus, “comprising . . . a take-up unit disposed in the case for taking up and accommodating the thin film flat display together with the hold means in the

case using a direction parallel with long sides of the rigid rectangular substrates as an axis", as recited, for example, in claim 8. (Application at paragraph [0019]).

With respect to the invention of claim 8, the Examiner admits that Aoki fails to teach or suggest the above-referenced exemplary feature of the invention of claim 8. Also, as previously stated in Section A, Aoki fails to teach or suggest the above-referenced exemplary features of the invention of claims 1 and 2.

To make up for the deficiencies of Aoki, the Examiner applies Fujieda. With respect to the invention of claim 8, the Examiner alleges that Fujieda teaches the

take-up unit (slit 116 of fig. 1) disposed in the case (housing 100 of fig. 1) for taking up and accommodating the thin film flat display (display 120 of fig. 2) together with the holding means (supporting device 130 of fig. 2) in the case using a direction parallel with a long side of the substrate as an axis (as shown in fig. 2).

(Office Action at page 7, second paragraph).

However, Fujieda clearly fails to teach or suggest an information display apparatus including a take-up unit disposed in the case for taking up and accommodating the thin film flat display together with the hold means in the case using a direction parallel with long sides of the rigid rectangular substrates as an axis. Fujieda teaches supporting device 130 in Figure 2 and paragraph [0059]. The supporting device, however, is a stick-like object capable of unfolding to an M shape. On the contrary, the invention of claim 8, as shown in Figures 9-12, is formed of multiple plates which can become large and flat in the unfolded state. The folded plate structure of the invention of claim 8 is clearly not taught or suggested by Fujieda, which simply suggests the stick being capable of unfolding to the M shape.

In addition, the Examiner fails to assert Fujieda with respect to the exemplary features of the invention of claims 1 and 2. Indeed, Fujieda clearly fails to teach or suggest an information display apparatus, where the thin film flat display includes a full color organic EL display capable of

displaying a full color television image and one of the main ribs includes a television receiver circuit, or where, in an unfolded state of the fan face, a thin film flat display formed on a flexible and bendy thin film has a flat surface and is joined to vertex portions of mountains of the fan face and, when the fan face is folded, the thin film flat display is folded to valleys of the fan face.

With respect to the invention of claim 9, to make up for the deficiencies of the alleged Aoki and Fujieda combination, the Examiner applies Moore. The Examiner alleges that Moore teaches “an apparatus characterized in that a magnet (magnet 108 in fig. 8) is disposed to at least one of two confronting side walls of adjacent substrates (panels 42 and 44 of fig. 8).” (Office Action at page 9, second paragraph).

However, Applicant respectfully disagrees. Specifically, Moore teaches that the confronting surface of the adjacent substrate is attracted in a face to face mode by magnet in the folded state. On the contrary, with respect to the invention of claim 9, when the thin film display is unfolded (i.e., expanded), the adjacent two substrates are attracted by magnetic force and all of the substrates form a large expanded flat. Thus, Moore fails to teach or suggest the information display apparatus where two of the adjacent substrates are connected by a magnetic force of the magnet such that a flat plane is formed when the thin film flat display is expanded. Regardless, Moore fails to make up for the deficiencies of the alleged Aoki and Fujieda combination with respect to the invention of claim 8. Thus, since claim 9 depends from claim 8, the alleged combination fails to teach or suggest the invention of claims 1, 2, and 8, and the Examiner fails to make a *prima facie* case of obviousness using Aoki, Fujieda, or Moore.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

C. The Maynard Reference

To make up for the deficiencies of Aoki and Fujieda, the Examiner applies Maynard. Maynard discloses a shape memory device. (Maynard at Abstract). The Examiner alleges that the combination of Fujieda and Maynard make the invention of claim 10 obvious, and the combination of Aoki and Maynard make the invention of claim 15 obvious, thus making the invention of claim 1 obvious.

However, even assuming (arguendo) that one of ordinary skill in the art would combine Aoki and Maynard, and Fujieda and Maynard, the resultant combinations fail to teach or suggest all features of the invention of claims 1 and 10, respectively. Specifically, Aoki, Fujieda, and Maynard – either applied alone or (arguendo) in combination – fail to teach or suggest an information display apparatus, “wherein said thin film flat display comprises a full color organic EL display capable of displaying a full color television image, and one of said main ribs comprises a television receiver circuit”, as recited, for example, in claim 1. (Application at paragraph [0014]). Also, Aoki, Fujieda, and Maynard – either applied alone or (arguendo) in combination – fail to teach or suggest an information display apparatus, “comprising . . . a thin film flat display formed on a thin film, said thin film comprising at least one of flexible shape memory alloy, shape memory resin, shape memory alloy fiber, and shape memory resin fiber”, as recited, for example, in claim 10 and similarly in claim 15 (Application at paragraph [0022]).

On page 10 of the Office Action, the Examiner alleges that Maynard teaches “a thin film (sheet 12 of fig. 1) comprising flexible shape memory alloy (col. 6, lines 16 – 35)” However, Maynard clearly fails to teach or suggest an information display apparatus, including a thin film flat display formed on a thin film, the thin film including at least one of flexible shape memory alloy, shape memory resin, shape memory alloy fiber, and shape memory resin fiber.

Specifically, Maynard fails to indicate that the fan face is formed of shape memory materials. Maynard simply suggests a catheter whose shape is changed by heating shape memory metal. On the other hand, in the invention of claims 10 and 15, employing the shape memory material to the fan face and the thin film display that is capable of being unfolded is completely different and not obvious from the teachings and suggestions of Maynard, which only applies a shape memory alloy to a catheter.

In addition, the Examiner fails to assert Maynard with respect to the exemplary feature of the invention of claims 1. Indeed, Maynard clearly fails to teach or suggest an information display apparatus, where the thin film flat display includes a full color organic EL display capable of displaying a full color television image and one of the main ribs includes a television receiver circuit.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection.

III. NEW CLAIMS

New claims 21-25 are added to claim additional features of the invention and to provide more varied protection for the claimed invention. These claims are independently patentable because of the novel and nonobvious features recited therein.

Specifically, with respect to the invention of claim 21, as is the case in the invention of claim 1, Aoki clearly fails to teach or suggest an information display apparatus, where the thin film flat display includes a full color organic EL display capable of displaying a full color television image and one of the main ribs includes a television receiver circuit. Indeed, the Examiner fails to allege that Aoki teaches this exemplary feature.

Additionally, with respect to the invention of claim 22, as is the case in the invention of claim 15, Maynard fails to indicate that the fan face is formed of shape memory materials. Maynard simply suggests a catheter whose shape is changed by heating shape memory metal. On the other hand, in the invention of claim 22, employing the shape memory material to the fan face and the thin film display that is capable of being unfolded is completely different and not obvious from the teachings and suggestions of Maynard, which only applies a shape memory alloy to a catheter.

Applicant submits that the new claims are patentable over the cited prior art references at least for analogous reasons to those set forth above.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1, 2, 4-16, and 18-25, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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(FUJIT.083)

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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